



Transcript of
Allowable Ex Parte Briefing

12/11/2019

DEC & DEP Applications for Approval of Proposed
Electric Transportation Pilot
2018-321-E, 2018-322-E

COPY

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Allowable Ex Parte Briefing 2018-321-E, 2018-322-E
DEC & DEP Applications for Approval of Proposed
Electric Transportation Pilot and An Accounting
Order to Defer Capital and Operating Expenses

TRANSCRIPT OF ALLOWABLE
PROCEEDINGS

EX PARTE BRIEFING

HEARING BEFORE: Commissioner Florence P. Belser;
Commissioner Thomas J. "Tom" Ervin; Commissioner
Swain E. Whitfield; Commissioner G. O'Neal Hamilton

ADVISOR TO COMMISSION: B. Randall Dong,
General Counsel

STAFF: William O. Richardson, Technical Advisory
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Electric Transportation for Duke Energy

Phil Jones, Executive Director, representing and
presenting for Alliance for Transportation
Electrification

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Office of Regulatory Staff

Sam Wellborn, Esq., representing Duke Energy Carolinas,
LLC and Duke Energy Progress, LLC

COURT REPORTER: Julie C. Taradash

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Please note the following inclusions/attachments to the record:

PowerPoint Presentation Slides (PDF) re: "South Carolina Electric Transportation Pilot"; "Electric Vehicle Cost-Benefit Analysis"

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PROCEEDINGS

COMMISSIONER BELSER: Please be seated. Good afternoon. Welcome to this afternoon's allowable ex parte briefing. This afternoon's briefing has been requested by Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC. This briefing has been scheduled and noticed for Wednesday, December 11th, at 2 p.m., in the Commission's hearing room, and this briefing is being streamed -- livestreamed on the Internet.

The subject of today's briefing is electric transportation, and the dockets noticed as potentially having issues addressed in this ex parte briefing are Docket 2018-321-E, Application of Duke Energy Carolinas, LLC, for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses; and Docket Number 2018-322-E, Application of Duke Energy Progress, LLC, for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses.

Mr. Dong, do you have anything to add?

1 MR. DONG: I -- I don't.

2 COMMISSIONER BELSER: Thank you. We'll now
3 take appearances.

4 MR. WELLBORN: Commissioner, for the
5 companies, I am Sam Wellborn of law firm
6 Robinson Gray Stepp & Laffitte.

7 COMMISSIONER BELSER: Thank you, Mr. Wellborn.
8 And for the third-party neutral?

9 MR. NELSON: Good afternoon, Commissioners.
10 Jeff Nelson on behalf of ORS, as the ORS
11 executive director's designated representative
12 here today.

13 COMMISSIONER BELSER: Thank you, Mr. Nelson.
14 Do you have some instructions regarding
15 today's briefing?

16 MR. NELSON: I certainly do, Commissioner
17 Belser.

18 COMMISSIONER BELSER: Thank you.

19 MR. NELSON: Briefly -- a lot of you have
20 probably been through these already today.
21 I'm Jeff Nelson, Chief Legal Officer for the
22 Office of Regulatory Staff. I am here today
23 as the designee of the Executive Director to
24 oversee this allowable ex parte presented by
25 Duke Energy Carolinas and Duke Energy

1 Progress.

2 As the ORS representative, it's my duty
3 to certify the record of this proceeding to
4 the chief clerk, Ms. Jocelyn Boyd, within 72
5 hours of the conclusion of the hearing today.
6 This is in accordance with the provisions of
7 Section 58-3-260(C). I am here as an
8 observer. I'm not here as a referee or to
9 dictate how the hearing is to be conducted.
10 We just observe and then either certify or
11 don't certify this hearing as to whether or
12 not it was conducted in accordance with the
13 statute.

14 The notice topic for this, as
15 Commissioner Belser's already stated, is
16 electric transportation; therefore, I ask that
17 any comments -- anything that's presented by
18 anybody here today continue just to focus on
19 that sole subject of electric transportation.
20 Under the provision of 58-3-260(C),
21 Commissioners and Commission staff are
22 prohibited from requesting or giving any
23 commitment, predetermination, or prediction.
24 And, in short, the presenters are prevented
25 from asking the Commission to make a decision

1 on anything. Other than that, we're pretty
2 much open to whatever you want to present.

3 I would ask that, also, if you can to try
4 and refrain from referencing any documents
5 that are not included in the presentation
6 today because, if so, we will need to be
7 provided with a copy of that to -- to make the
8 filing.

9 Finally, everybody that is here should've
10 picked up a form and signed in when you came
11 in today. Please make sure that you read and
12 sign that form and turn it back in before you
13 leave today.

14 Thank you, Commissioner Belser.

15 COMMISSIONER BELSER: Thank you, Mr. Nelson.
16 Mr. Wellborn, we'll turn it over to you.

17 MR. WELLBORN: Thank you, Commissioner. Thank
18 you, Mr. Nelson, for that. And good
19 afternoon, Commissioners and Counsel for the
20 Commission. For -- thank you for making time
21 for this this afternoon, and I hope that you
22 find it informative and useful.

23 As I said, I'm Sam Wellborn, outside
24 counsel for Duke Energy Carolinas and Duke
25 Energy Progress. As indicated, we will cover

1 the company's applications and other
2 information related to the electric
3 transportation pilots, and the information
4 will be presented by a panel of Lang Reynolds
5 and Phil Jones. Mr. Reynolds is director of
6 electric transportation for Duke Energy, and,
7 as such, he's responsible for the development
8 and implementation of electric transportation
9 programs across Duke Energy's utility
10 operating companies. Mr. Jones is the
11 executive director of the Alliance for
12 Transportation Electrification, or ATE, which
13 is a non-profit consisting of auto
14 manufacturers, EV infrastructure vendors,
15 trade associations, utilities, and others that
16 serve to promote the accelerated adoption of
17 electric vehicles and EV infrastructure in key
18 states and regions. We appreciate, again, you
19 allowing us to present this information in a
20 panel format, and we've explained to our panel
21 members the importance of not talking over
22 each other so that our court reporter can do
23 her -- do her job ably.

24 Again, thank you for your time this
25 afternoon, and I'll turn things over to our

1 panel.

2 COMMISSIONER BELSER: Thank you, Mr. Wellborn.

3 Who's first? Mr. Jones?

4 MR. WELLBORN: Mr. Jones.

5 MR. JONES: I think I'm the designated lead-
6 off hitter, Commissioner. So I'll try to keep
7 this short, to five to eight minutes, and then
8 turn it over to Mr. Reynolds who really is the
9 expert on this.

10 It's good to be here in Columbia, South
11 Carolina. I see some of my former colleagues
12 on the bench, and it's good to be here. I was
13 here for your stakeholder workshop in January
14 of this year and participated in that and
15 found that to be quite constructive.

16 A little bit about me who -- for those of
17 you who don't know me: I am what you call an
18 energy policy wonk, or a geek. I started
19 working on energy and utility issues for
20 Senator Evans, in the U.S. Senate, in the
21 early '80s. And I've been involved in this
22 field for about 30-plus years.

23 I also worked on economic development. I
24 represented the State of Ohio. I -- I don't
25 know if you know this, but I lived in Japan

1 for five years, working for the governor at
2 the time. And so we were recruiting auto
3 companies to the State of Ohio, and we
4 succeeding -- succeeded in attracting Honda.
5 So this is kind of a -- a full circle for me
6 because now I'm working on automobiles again.

7 In 2005, I became a commissioner,
8 appointed by Governor Greg Warren. I served
9 two terms with the UTC, the Utilities and
10 Transportation Commission. I sat on the bench
11 during multiple rate cases, ratemakings, and
12 all sorts of proceedings.

13 I rose up in the leadership of NARUC, the
14 National Association of Regulatory Utility
15 Commissioners, and served as its president of
16 NARUC six years ago.

17 Today, I am passionate about electric
18 vehicles; that's why I'm here. Let me tell
19 you a little bit about ATE, or the Alliance.
20 Two years ago, after I left the Commission,
21 there was a group of people who came to me and
22 said, "Phil, we need some help. We -- there
23 -- there is a need for people to go to the
24 states and talk on a multi-sector
25 collaborative basis about how to promote

1 accelerated adoption of electric vehicles."

2 So they asked me to take a look at the
3 landscape, and I did. There was a lot of
4 interest in forming a new association that
5 would focus on states.

6 We have three goals. The first goal is
7 to accelerate adoption of EVs, electric
8 vehicles, and its infrastructure. The second
9 is to promote a strong utility role. The
10 utility role can be varied. We can talk about
11 that today, about what the utility role is,
12 and do it on the regulated side, not on -- not
13 necessarily on the unregulated side. And the
14 third is a little bit technical but important
15 for you today, which I will talk about, which
16 is interoperability. Right now, we have
17 systems that are being built out that are
18 proprietary, that are just -- speak to
19 themselves, but not to others. And we feel
20 that, as we get to scale, the systems need to
21 talk to each other.

22 We are active in over 25 states. The
23 states, frankly, are leading on issues of
24 energy policy, air quality, and other issues.
25 So we -- we want to engage and support.

1 So a few thoughts for your review today.

2 First, on the overall market, this is

3 happening: electrification of vehicles.

4 We're on the cusp of a major, major change in

5 -- in transportation in this country. As I

6 said in my opener, I'm -- I'm excited to be in

7 this space after serving as a commissioner for

8 12 years. I always took an interest, as some

9 of you know, in new technologies,

10 cybersecurity, and other issues.

11 Just two weeks ago, I was at the Los

12 Angeles Auto Show. This has become the

13 premier show for electric vehicles in North

14 America. At that show, Ford introduced the

15 Mustang. It's all electric. It's called the

16 "Mach-E." Who would've thought, when I grew

17 up in -- in the 1960s and '70s, that Ford, the

18 muscle car, would -- would be all electric?

19 It's all electric now. VW has new models;

20 General Motors. You know, I can just go down

21 the list. And I think Mr. Reynolds will talk

22 about this more.

23 So it's not just Tesla anymore. When I

24 go around to the states, people say, "Phil,

25 you're just promoting Tesla and a luxury

1 vehicle."

2 And I'm saying, "No. There are a lot of
3 new models -- well-priced models." EPRI has a
4 study, and we can put this in the record if
5 ORS and others want it. It comes out every
6 March. The Electric Power Research Institute
7 publishes a study. Today, 44 models are
8 available for sale, and EPRI estimates that,
9 by the end of 2022, 140 will be. So that's my
10 first point, is this is happening.

11 The second is bus and heavy-duty and
12 medium-duty EVs are becoming a real issue,
13 especially here in South Carolina. Just in
14 your state alone, you have a company called
15 "Proterra." It's an all-electric bus maker.
16 They have sold to transit agencies in
17 communities throughout the state, like Rock
18 Hill, Clemson, Charleston, Greenville. These
19 are early-stage pilots, so you may ask, "What
20 is the utility role?" Well, the utility role
21 is to take it further. These are early-stage
22 pilots. And, just a month ago, in Miami-Dade,
23 in the state to the south of you, the largest
24 order of electric buses was announced by
25 Miami-Dade, 33 electric buses, up to 75

1 chargers, and they will be implementing this
2 over the next few years. So I think, South
3 Carolina, you do have an economic development
4 role, and this is happening around you.

5 And I should add that all of these buses
6 that are being adopted here are open standard.
7 They use a common plug called "J-1772," 1-7-7-
8 2.

9 So what is the role of the utility?
10 Well, the role of the utility is key. It's
11 where the fuel of the future comes from. It's
12 kilowatt-hours. It's electricity. It's not
13 gasoline or diesel. So the utility -- the
14 regulated utilities that you regulate will
15 have to be involved heavily in this
16 discussion. The utility can serve as a
17 catalyst for market transformation. It can
18 help with things like load management. These
19 loads have to be reliably integrated into the
20 grid. You're going to be in charge of rate
21 design: How much is volumetric; how much is
22 demand charge? And then, finally, you can
23 play a role in interoperability.

24 I was asked to speak about a few other
25 states. Just let me mention three. Maryland

1 has done a good job here in terms of a best-
2 practice. They had a grid modernization
3 proceeding called "PC 44," and, within that,
4 Chairman Kevin Hughes focused on EVs, and they
5 issued an order in response to a utility
6 filing in January of this year. And Baltimore
7 Gas & Electric, PEPCO, Delmarva, are spending
8 about \$45 million over a period of three years
9 on charging infrastructure. It's spread
10 across workplace, residential, public.

11 Arizona has done a good job. I -- I
12 spent a lot of time in Arizona last year
13 working with the commissioners on developing a
14 policy and then an implantation plan for
15 utilities to file in Arizona. And, already,
16 Tucson Electric has filed, and APS is filing.
17 And Salt River Project is similar to Santee
18 Cooper in your state, one of the biggest
19 publicly-owned utilities in the country. SRP
20 is a member of the Alliance, and they have
21 projected that they will have 350,000
22 vehicles. Let me say that again: 350,000 EVs
23 in their service territory over the next 15
24 years, and 90 percent of those are going to be
25 managed charging. So Arizona is -- is doing

1 good things.

2 Finally, Missouri, KCP&L, Ameren are
3 there, and the chairman of that commission and
4 the commissioners have been reacting to those
5 trends. They have approved about \$25 million
6 in charging infrastructure. That's a
7 combination of workplace, residential, and
8 corridor charging. In my state of Washington
9 -- Washington State in the Northwest, we have
10 a similar amount approved, and we have a UTC
11 policy statement, as well.

12 So, finally, let me just sum up by saying
13 Duke's -- I can't comment on the specifics of
14 the filing, of course. But I think it is a
15 modest filing when I look at these other
16 states, the amounts, the scope. It is within
17 the range of what those states have already
18 approved. The proposal seeks early learning
19 from pilots. I would urge you not just to
20 work on pilots, but think about scale, what
21 this is going look like in five or ten years.
22 Own and operate is a good model, as well as
23 what we call "make ready." Make ready is when
24 the utility goes beyond the meter and builds
25 out the conduit and wiring to the stub, and

1 then maybe a non-utility provider takes over.
2 But we argue that own and operate, especially
3 for the more challenging situations, is
4 important.

5 And -- and, finally, I would just say:
6 Keep South Carolina on the map. Right now, I
7 don't think you're on the map and -- because
8 you have not acted. And I really think, with
9 the automotive industry in South Carolina and
10 throughout the southeast states, both for
11 medium- and heavy-duty, as well as for light-
12 duty, you really have a key role to play. So
13 I would urge you to study up on this
14 situation, and I'd be happy to answer some of
15 your questions, too. So thank you.

16 COMMISSIONER BELSER: Thank you, Mr. Jones.
17 Mr. Reynolds?

18 MR. REYNOLDS: Thank you.

19 COMMISSIONER BELSER: Are you on? There you
20 go.

21 MR. REYNOLDS: There we go. Can you hear me?

22 COMMISSIONER BELSER: Yes, sir.

23 MR. REYNOLDS: Okay. Thank you.

24 Thanks for having us here today again.

25 And thank you, Mr. -- Mr. Jones, for being

1 here as well. I share Mr. Jones' passion for
2 this topic, and I'm going to be talking about
3 our proposal. Also some, just things that
4 we're seeing in the market and a little bit
5 about why we're working on this as an
6 initiative here at Duke Energy.

7 (Slide 5)

8 So, just to start from the top with some
9 of the application timeline, just so that we
10 -- we level set with how we -- how we got here
11 today.

12 Last year, in October -- October 10th of
13 last year, we -- we filed the applications
14 that were referenced earlier at -- at the
15 beginning of this meeting.

16 Following that, towards the end of
17 December, ORS requested a Stakeholder Working
18 Group to be facilitated by ORS, and that met
19 in January of this year -- earlier this year,
20 January 28th.

21 And that was followed by a follow-up
22 conference call in March and a final Working
23 Group report from ORS.

24 In response to the comments from the
25 Working Group and -- and other comments, we

1 filed an amended application in April, and
2 then following that, there were a couple of
3 other filings of -- of comments from other
4 parties, stakeholders, and ORS as well. So I
5 believe August was the last filing that's in
6 this docket with some of our reply comments
7 and -- and other reply comments. So just to
8 start off with the timeline of how we got here
9 today.

10 (Slide 6)

11 Next, in terms of what we're seeing in
12 the market, and Phil teed this up very nicely
13 in terms of -- of the growth that we're seeing
14 in the market, the progress we're seeing from
15 a lot of different auto manufacturers across
16 the spectrum of the market.

17 And, in general, we see a couple of key
18 themes. Batteries are declining in cost,
19 which is reducing the cost of vehicles, and
20 sales are increasing around the world. So
21 around the world and also here in the U.S.

22 This couple of charts here just shows the
23 decline in battery prices and how we've
24 actually just heard about a further decline in
25 battery prices and an update to this chart,

1 which should show an 86 percent decline from
2 2010 until now. So batteries are coming down
3 in price. We expect that trend to continue.
4 And on the right-hand side, that just shows
5 the global auto sales increasing over time.

6 We're seeing a lot of demand from our
7 customers for this technology, and that's
8 reflected in things like our website traffic.
9 We saw our EV website traffic increase over
10 six times from 2018 to 2019 year to date. So
11 we're seeing quite a bit of -- of interest
12 from our customers and really across a number
13 of different market segments.

14 (Slide 7)

15 In terms of the vehicles, the main trend
16 that we're seeing is an expansion from the
17 early market adopters, things like Tesla and
18 -- and the Chevy Bolt and the Nissan LEAF,
19 which were pretty niche vehicles. Now we're
20 seeing vehicles that go further, they cost
21 less, and they also appeal to a broader cross-
22 section of the market. So, on the top line
23 here, we have the Chevy Bolt, the Tesla Model
24 3, and the Nissan LEAF, all of which are
25 available for under \$40,000, and they all

1 travel further than 200 miles on a charge. So
2 batteries are getting longer ranges. Costs
3 are coming down.

4 And then we're also seeing, as -- as Mr.
5 Jones mentioned, with these new announcements
6 from automakers, pretty much every week it
7 seems like now, we're seeing some -- some
8 larger vehicles, faster vehicles, and -- and
9 just a real broadening of the market out from
10 -- from a niche market to something that can
11 appeal to a broad cross-section of American
12 consumers.

13 (Slide 8)

14 So here at Duke Energy we have embarked
15 on this initiative really as an economic
16 development initiative for our service
17 territories. And here specifically in SC, we
18 see a strong economic development opportunity
19 for the electrification of transportation.
20 And how that translates into an economic
21 development opportunity is really through
22 these four points.

23 So, first of all, we see strong fuel and
24 maintenance cost savings from electric
25 vehicles. Our residential owners, on average,

1 save about \$1,000 a year from an -- from an
2 electric vehicle, and that comes from the
3 electricity being lower than equivalent
4 gasoline fueling costs, which we've showed
5 here on the right-hand side in this graph of
6 gasoline equivalent -- or gasoline prices
7 versus the electric equivalent on a dollars-
8 per-gallon basis.

9 So over the last 40 years or so,
10 electricity has been cheaper, and it's also
11 been a more stable fuel source in -- in terms
12 of the price and having lower volatility.

13 On the air quality side of things, EVs
14 are -- are talked about a lot from an
15 environmental standpoint and this also has an
16 influence on economic development, because we
17 have corridors here in the state like the I-85
18 corridor, which is kind of perpetually on the
19 border between attainment and non-attainment.
20 And I realize that the Commission is not an
21 environmental regulatory body, but this does
22 connect with economic development because of
23 the ability to recruit industry into areas
24 that are not in attainment. And looking at
25 the attainment values, the NOx emissions from

1 transportation, which are higher than -- than
2 power-plant emissions in the state right now,
3 have a strong influence of whether we stay in
4 attainment for these areas in the state.

5 We talked about automakers expanding
6 their EV offerings, and with South Carolina
7 having such a heavy influence or heavy
8 footprint of auto manufacturing, we want to
9 make sure that we -- we stay at the forefront
10 of that manufacturing. And automakers such as
11 Volvo and BMW have both made strong
12 commitments to electrification.

13 Volvo, in particular, has a target of
14 having all of their vehicles having an
15 electrified component by 2025, which is pretty
16 impressive. BMW, likewise, has -- has made
17 strong commitments to electrification in their
18 product line. So we want to make sure that
19 South Carolina is staying on the forefront
20 there, and we feel that this proposal supports
21 that development.

22 Lastly, and most importantly, from a
23 utilities standpoint, we believe that
24 increasing adoption of electric vehicles can
25 put downward pressure on rates by increasing

1 electric system utilization in an efficient
2 manner. That, basically, spreads our fixed
3 costs over a greater number of kilowatt-hours
4 and can put downward pressure on rates over
5 the long-term.

6 (Slide 9)

7 We've done some analysis on this -- on
8 this question about downward rate pressure,
9 and we've included that here today with one of
10 our exhibits that was filed with the
11 application. So we had a study performed by
12 MJ Bradley last year in 2018. And it looked
13 at a couple of different scenarios of EV
14 adoption to determine what the impacts on the
15 utility system would look like here in the
16 state of South Carolina.

17 So the two scenarios are illuminated
18 here. We, basically, looked at a moderate
19 scenario, which is from an EIA forecast. And
20 that, basically, goes out to about five or six
21 percent market share by 2030 and then stays
22 around there for the following 20 years.
23 That's contrasted against another scenario
24 that goes to about 90 percent market share by
25 2050.

1 So these are not necessarily forecasts.

2 We're not saying that either one of these is
3 -- is necessarily likely to occur. But we're
4 -- we're trying to assess the impact of these
5 different scenarios on the utility system.

6 So, looking at these different scenarios,
7 we had a number of conclusions from the
8 report. And this shows the -- the main
9 takeaway that -- that we have from the utility
10 standpoint and looking at the cost and
11 benefits on the utility system.

12 (Slide 10)

13 So we have the benefits in terms of the
14 net revenue. That's the blue bars there on
15 the left-hand side of each year. And on the
16 right-hand side are the costs in terms of
17 generation, transmission, and distribution.

18 And, basically, the takeaway from this
19 part of the analysis is that there's net
20 revenue provided to the system by EV charging
21 in excess of the cost to serve that load. And
22 to take a concrete data point, just looking at
23 the 2030 time frame, the net revenue increases
24 from \$18 million a year to \$89 million a year.
25 So there's a strong increase in that net

1 revenue benefit by going from the low adoption
2 scenario to the high adoption scenario. So,
3 in -- in plain terms, what this analysis shows
4 is that increasing EV adoption can benefit the
5 utility system by providing incremental net
6 revenue.

7 (Slide 11)

8 So moving on to our pilot -- our pilot
9 proposals -- our proposal as filed. I'm going
10 to go through each component of it, but just
11 to start with the overall goal. I was just
12 talking about the electric system utilization,
13 and that's a large goal of the pilot, is to
14 understand how these EVs are -- are coming
15 onto the system and the -- the potential
16 customer benefits from increasing electric
17 system utilization.

18 We also want to gather more data around
19 the economic benefits and also the
20 environmental benefits and try to use that
21 data to create scalable programs in the
22 future.

23 So, in terms of the -- the pilot itself,
24 we have four different programs within the
25 pilot, and I'm going to go through each of

1 those programs specifically. But, just to
2 start off with the high-level overview, we
3 looked at electric transportation programs
4 around the country, and we attempted to take
5 best practices from -- from programs that we
6 saw elsewhere, and also taking input from our
7 customers and other stakeholders to develop
8 programs that we felt would have the highest
9 impact, gather the -- the most data that we
10 could, and provide those benefits to a broad
11 cross-section of customers.

12 (Slide 12)

13 So the four programs were a -- or are: a
14 Residential EV Charging Program, the EV School
15 Bus Program, the EV Transit Bus Program, and
16 the Fast Charging Program.

17 So these all target specific technologies
18 and -- and specific customer groups, but also
19 give us a portfolio of programs, which address
20 different segments of the market and different
21 types of electric vehicles.

22 (Slide 13)

23 The Residential EV Charging Program: We
24 proposed that with a 400 customer limit, and
25 it's a rebate structure, which has a \$500

1 rebate and then a quarterly participation
2 payments which adds up to a total,
3 potentially, of a \$1,000 over the three years
4 of the program. And I should add that all of
5 these programs were proposed with a three-year
6 timeline in order to provide a -- you know, a
7 specific timeline over which to implement the
8 programs, and also give a -- a timeline for --
9 for future analysis of the programs and -- and
10 -- and following programs after the pilot.

11 (Slide 13)

12 Within this program, the customer would
13 have a choice of electric vehicle chargers to
14 install. That acronym, EVSE, just stands for
15 electric vehicle supply equipment. So the
16 customer would have the choice of EVSE to
17 install. And over the first year of the
18 pilot, we would gather data to provide a
19 baseline to compare against for the next two
20 years.

21 Over the next two -- two years, we would
22 perform experimental load management events
23 and use that data to determine customer
24 ability -- the customer's ability to
25 participate in that load management and -- and

1 remain in good standing in the program and
2 receive those quarterly payments as an
3 incentive to remain in the program.

4 On the right-hand side there, that's just
5 a graph showing, from the analysis, the
6 estimated value of residential EV charging to
7 the utility system, which is between 800 and a
8 \$1,000 -- \$800 with -- without any management,
9 and then over a \$1,000 with managed charging.
10 And so that's how we came to the \$1,000 value
11 for the rebate.

12 (Slide 14)

13 Moving on to the Electric School Bus
14 program, the purpose of this program was to
15 gather EV school bus charging data and
16 determine the possible value of bidirectional
17 power flow and demonstrate the capability of
18 these buses to perform that bidirectional
19 power flow. So bidirectional power flow is
20 just sending power from the battery back to
21 the building or potentially to the grid. It's
22 a -- a pretty -- a pretty hot topic right now
23 in the electric vehicle industry.

24 A lot of these buses are -- are starting
25 to come on the market, but we don't have any

1 here in South Carolina yet, and we haven't
2 demonstrated their capabilities here in South
3 Carolina.

4 So we want to understand how these
5 vehicles work and understand their duty cycles
6 and whether or not they can be used as --
7 essentially as grid resources with that
8 bidirectional power capability.

9 In terms of numbers, we proposed the
10 program to incentivize 15 total buses and
11 those are divided between DEC and DEP for ten
12 and five. And the customer would have the
13 responsibility to own and operate the
14 infrastructure in this case and select the
15 infrastructure that's appropriate for their
16 application.

17 Another feature of this -- of this
18 program is that we would retain the -- the
19 right to own the battery at the end of the
20 useful life of the bus. And, so, we
21 understand that there's the potential for the
22 buses or for the batteries to have useful life
23 after the buses have been taken out of
24 service. And -- and so, in exchange for
25 providing this incentive, we wanted to retain

1 some of that capability to keep the batteries,
2 basically, as -- as potential assets after the
3 useful life and the school bus.

4 (Slide 15)

5 Moving on to the Transit Bus program. As
6 Mr. Jones mentioned, there are a number of
7 transit agencies that are deploying electric
8 buses in South Carolina right now and this
9 program would support advanced deployment of
10 even more buses in the state of South
11 Carolina.

12 In this case, we would provide a \$55,000
13 incentive. We've limited it to 20 buses in
14 DEC and ten buses in DEP. And the incentive
15 is meant to fund the installation of the
16 infrastructure, and in exchange, the company
17 would gather data and also determine the
18 potential for load management capabilities of
19 the electric transit buses being deployed.

20 (Slide 16)

21 Lastly, with the Fast Charging Program,
22 we've proposed to install 60 stations across
23 the state, within the DEC and DEP service
24 territories. We have a map up here for just
25 indicative purposes. These aren't selected

1 locations or anything that specific. They're
2 just meant to show the -- the type of coverage
3 that we intend to secure with these
4 installations. So the goal is to make it
5 possible for EV drivers to drive from one end
6 of the state to another. That's not currently
7 possible right now, and it's one of the main
8 barriers to advanced adoption of electric
9 vehicles from what we understand from our
10 customers.

11 These would be utility owned and operated
12 fast chargers, and we think it's important for
13 the utility to own and operate public fast
14 chargers, because we've seen a lot of examples
15 across the country where there are different
16 programs and -- and the chargers are funded
17 by, say, a utility program or another grant
18 program, and they're not well-maintained.
19 They fall into disrepair, and they become
20 stranded assets over time.

21 So we want to protect against that risk
22 and operate these chargers. Our -- our goal
23 is that they would not be the only chargers
24 out there. We want to see other third parties
25 and the private market -- a healthy private

1 market also installing chargers. But we
2 proposed this limited investment to support
3 market growth across the state.

4 We would be installing higher-powered
5 chargers, above 100 kilowatt of capacity,
6 which is kind of the next generation of
7 chargers right now. And that would allow us
8 to make sure that these chargers are used over
9 the -- over the long term and -- and don't
10 become obsolete quickly.

11 We're also proposing a fast-charge fee,
12 so we're not proposing to just charge the cost
13 of electricity. We understand that would
14 undercut private operators. So we're
15 proposing a fast-charge fee, charged to
16 drivers, that's in line with the statewide
17 average, which would be calculated on a
18 quarterly basis. Any net revenue from -- from
19 that activity, would be credited against the
20 program. So, in that way, the -- the chargers
21 and the users of the chargers would
22 incrementally pay for a larger proportion of
23 the cost of that portion of the program.

24 (Slide 17)

25 So, in summary, we just have some of the

1 summary numbers here from the different
2 programs. And, again, we are looking to
3 establish customer charging behavior, the
4 potential for utility-managed charging on the
5 school bus and transit bus portions. We want
6 to demonstrate this capability, the
7 capabilities of these transit vehicles, and
8 also make sure this program really addresses a
9 broad cross-section of customers. You know,
10 we realize that not everybody is -- is driving
11 an electric vehicle, but there are a lot of
12 people riding buses. There are a lot of
13 customers who have children who -- who ride
14 school buses, and a lot of those vehicles are
15 -- are old and -- and, you know, have higher
16 emitting engines than these zero-emission
17 vehicles that we can deploy within this
18 program.

19 And, again, lastly, with the fast-charge
20 stations, we're looking to provide a
21 foundational level of infrastructure across
22 the state of South Carolina.

23 (Slide 18)

24 So, in terms of budget, I wanted to touch
25 quickly on the overall budget. And looking at

1 the -- the two service territories and the
2 split between capital and O&M costs, overall
3 the total budget that we proposed in our
4 amended application was 14.5 million, and
5 that's broken down between 9.9 for DEC and 4.7
6 for DEP. The majority of the capital is
7 within the DC fast charge stations, and most
8 of the rest of the costs are -- are classified
9 as -- as O&M, as proposed. So it was also
10 mentioned that we proposed a deferral
11 accounting order for a deferral of the costs,
12 and -- and, so, the costs would -- would be
13 allocated to that deferral. And -- and so
14 we're not asking for recovery in this
15 particular proposal, but rather the deferral.

16 And we've listed out each individual
17 program here to give an idea of the scale of
18 each of these programs. So I can run through
19 those, but we've listed out each of the costs
20 here.

21 (Slide 19)

22 So, in summary, and -- and in, you know,
23 to some of Mr. Jones' points, we believe the
24 time is right in South Carolina to -- to go
25 forward with this proposal. Our -- our goal

1 is to explore different methods for EV
2 charging and -- and other potential for
3 charging load management to increase the value
4 of EVs to the utility system.

5 We also believe this supports advanced
6 market adoption of EVs in South Carolina and
7 the transit and school bus programs, we
8 believe, support public agencies by deploying
9 these EV alternatives and can reduce costs and
10 emissions for those public agencies.

11 There's also another timing issue with
12 the VW settlement and the funding available
13 from that grant program, which is being run by
14 the Department of Insurance. Within that
15 program, the funds are available for a limited
16 period of time, and so we think that the --
17 the school bus portion and the transit bus
18 portions that we've proposed specifically
19 could potentially leverage that funding and
20 deploy more -- more vehicles than otherwise
21 might be deployed under the existing funding
22 opportunities.

23 And the last thing I would add, just in
24 terms of the timing, and -- and the scale of
25 the program, Mr. Jones also mentioned

1 scaleability. These programs are designed for
2 scaleability, and the goal is to gather enough
3 data to propose following programs of -- of
4 different types after the pilot program. So
5 we have a -- a specific time period over three
6 years in which we would execute the pilot
7 programs, and then we would gather data, work
8 with our stakeholders in an ongoing process
9 that we also proposed in the amended
10 application, and develop future programs to
11 ensure that we are securing those benefits
12 that we think are possible that we outlined in
13 the analysis from MJ Bradley.

14 So that's all of the information that I
15 had. We are happy to answer questions on
16 anything that we've presented today.

17 COMMISSIONER BELSER: Thank you, gentlemen.
18 Commissioners, any questions? Commissioner
19 Ervin.

20 COMMISSIONER ERVIN: Mr. Reynolds, thank you
21 for being here today, and Mr. Jones. It's
22 been a very informative presentation.

23 I'm interested -- what is -- what are the
24 limitations on the VW settlement funds? Is
25 there a -- is there a deadline to apply for

1 those funds? And is it a match or is it --
2 how -- how does that work?

3 MR. REYNOLDS: So, as I mentioned, the
4 Department of Insurance is the beneficiary for
5 the State of South Carolina, so they have
6 determined the process for deploying those
7 funds. And there was -- they, basically,
8 separated the funds into different tranches of
9 funding, and they -- they awarded one of those
10 tranches this -- this past year. It was
11 awarded to a school bus project. And so they
12 haven't announced any future application
13 windows or anything like that, so it's unclear
14 right now how the remaining funds will be
15 spent. But, overall, it's a ten-year window,
16 starting in 2016, I believe.

17 MR. JONES: Commissioner Ervin, I'll just add
18 a few things. It's a pretty flexible
19 settlement. This was a -- this was, as you
20 know -- was VW cheating on emissions, and,
21 therefore, it was a court settlement entered
22 into for the northern district of California,
23 and then CARB, the California Air Resources
24 Board, and Federal EPA monitor the terms of
25 the settlement. It is ten years, as Lang

1 said. It's pretty flexible in terms of the
2 state can amend its application from time to
3 time, and we see states doing this.

4 Frankly, when the governor turns over,
5 like we've seen in the 2018 elections, the --
6 the initial -- what we call a "beneficiary
7 mitigation plan," a BMP, you submit it to the
8 trust in Delaware, and then they approve it.

9 Some of these plans have been changed.
10 For example, in Wisconsin, the previous
11 governor didn't think EVs were important. Up
12 to 15 percent of the monies can be spent on
13 light-duty EV charging stations. Initially,
14 Wisconsin said no. And then, after the new
15 governor came in, they changed the
16 application. So they can spend up to 15
17 percent now on light-duty charging stations.

18 So, it's a pretty flexible document.
19 What we urge commissions to do, like you, and
20 Texas is doing this right now, is try to work
21 with your sister agencies and the governor's
22 offices, if they're interested -- usually, the
23 governor's office plays a strong role in this
24 -- and -- and just try to coordinate a little
25 bit. You know, Duke has a filing in here.

1 DOT wants to do this. Air quality this. Try
2 to get people around the table. Not that it's
3 -- it's mandatory, but you get a good flow of
4 information and usually the -- it's -- it's
5 the environmental agency that's responsible.
6 Here it's the Department of Insurance. But
7 there are a number of agencies who can get
8 involved. So -- so I would urge you to think
9 about that.

10 COMMISSIONER ERVIN: My next question is the
11 timing, and I understand it's a three-year
12 pilot, assuming that the Commission ultimately
13 approved the application, what -- what's the
14 implementation schedule?

15 MR. REYNOLDS: So we've been working
16 throughout the year to set ourselves up to
17 implement quickly if there is an approval. So
18 we would be implementing very quickly.

19 COMMISSIONER ERVIN: This coming year?

20 MR. REYNOLDS: Yes. Yeah.

21 COMMISSIONER ERVIN: Is the -- is the -- is
22 this set for hearing soon, already? Do you
23 know?

24 MR. REYNOLDS: Not to my knowledge.

25 COMMISSIONER ERVIN: All right. And then the

1 next question would be: The -- the charging
2 stations piece, would you reach out to various
3 retail establishments to -- to try to -- to
4 have a network or how would that -- how would
5 siting be determined?

6 MR. REYNOLDS: Yes. We would look to partner
7 with -- with third parties with -- they would
8 have to be a customer of -- of one of the
9 companies, and those could be retail
10 operators. They could be state -- state
11 agencies, potentially, if they have publicly
12 accessible land close to highway corridors.
13 That's the main qualification that we're
14 looking for is: highway corridor access, 24-7
15 access for the public, and then also other
16 amenities like -- like restrooms and food and
17 things like that.

18 COMMISSIONER ERVIN: Thank you.

19 MR. JONES: Sir, if I could -- Commissioner
20 Ervin, if I could just add something there.
21 It's important to think of this in -- in three
22 buckets: the utility bucket, the host-site
23 bucket, and then the EV network operator
24 bucker. So, Lang is right, parking lots,
25 cinemas, retail operations play a big role.

1 But the other big player are EV
2 infrastructure providers like Charge Point,
3 Green Lots, EV Connect; there are scores of
4 these. So they have to provide the
5 infrastructure, and, more importantly, as I
6 said in my statement on interoperability,
7 right now they are not entirely interoperable.
8 They all have their RFID cards. And, so, it's
9 important, I think, for the Commission to
10 recognize that these operators need to
11 involved, too. Now, Duke could co-brand with
12 -- if they own and operate, they could invite
13 one of these EV infrastructure providers to
14 both qualify the hardware and the software.
15 So they would operate the network shared with
16 Duke. Or another model out there -- Duke is
17 not proposing this -- but in -- in candor,
18 some of these models are what we call "make
19 ready" with the rebate and then the utility
20 doesn't have to get involved in network
21 management issues.

22 So there are a number of ways they can do
23 it. The -- but -- but the important thing is:
24 Keep your focus on the consumer, I would urge
25 you to do. Because the consumer -- the EV

1 owner, at the end of the day, has to drive the
2 vehicle, charge the vehicle, and then pay the
3 bill. So . . .

4 COMMISSIONER ERVIN: How long does it take a
5 fast-charging station to -- to recharge a
6 vehicle?

7 MR. REYNOLDS: It's pretty variable, depending
8 on the -- the car, actually. So there's --
9 there's different technologies with the
10 different cars. But, right now, on average,
11 we see about a 30-minute stop for our
12 customers that are using a fast charger.

13 COMMISSIONER ERVIN: What's the useful life of
14 the -- the unit that you're proposing be
15 installed in South Carolina?

16 MR. REYNOLDS: I believe we proposed a ten-
17 year useful life.

18 COMMISSIONER ERVIN: Thank you.

19 COMMISSIONER BELSER: Commissioner Hamilton.

20 COMMISSIONER HAMILTON: Thank you, Ms.
21 Chairman.

22 Phil, it's always good to see you, sir.
23 Seems like you're doing well.

24 MR. JONES: Good to be here.

25 COMMISSIONER HAMILTON: Good -- good to have

1 you. Mr. Lang, you also.

2 What is a penetration of the number of
3 vehicles registered in South Carolina today --
4 electric vehicles? Do you have any idea?

5 MR. REYNOLDS: Yeah. According to our latest
6 data, it's about 4500, just under 5,000,
7 somewhere in that range.

8 COMMISSIONER HAMILTON: And most of these are
9 storage -- they do their own charging at home
10 or . . .

11 MR. REYNOLDS: Yeah. Most of the data, on
12 average, we've seen about 80 percent of
13 charging takes place at home -- at home.

14 COMMISSIONER HAMILTON: Okay. And -- and do
15 you already have some charging stations within
16 your territory that's operable?

17 MR. REYNOLDS: In terms of fast charging --

18 COMMISSIONER HAMILTON: Yeah.

19 MR. REYNOLDS: -- or third -- party -- yes.

20 There are Level 2 and fast chargers.

21 COMMISSIONER HAMILTON: Okay. And this is --
22 we're in the early steps getting ready to get
23 started, I think. Like Phil said, we may be a
24 little bit behind. And . . .

25 MR. JONES: Well, I -- I didn't mean that in a

1 critical way, Commissioner Hamilton.

2 COMMISSIONER HAMILTON: No. I'm sure you
3 didn't.

4 MR. JONES: But I just think that -- you know,
5 I live in the state of Washington, and when
6 Boeing moved one of its plants from Washington
7 State down here, I had some conversations with
8 you-all, and there was a big competitive
9 spirit --

10 COMMISSIONER HAMILTON: We -- we kind of
11 remember that.

12 MR. JONES: -- between the two states. And --
13 and so my only point is that I think you have
14 a very strong automotive industry here --
15 supply chain, and there are going to be
16 batteries; there's going to be whole range of
17 components that go into these vehicles, so
18 that was my only admonition was to -- when
19 companies look at states, they don't just look
20 to the governor. They just don't look at the
21 incentives, like in California. We all know
22 California has a lot of incentives.

23 COMMISSIONER HAMILTON: Yeah.

24 MR. JONES: What they're looking at is: What
25 is the regulatory and policy climate? So they

1 include you, the environmental agency, and all
2 sorts of state agencies. So if you were to
3 act, I think that would be a positive to --
4 because this is a global industry. You know,
5 Volkswagen, all sorts of people. So, yeah. I
6 -- I -- I urge you to take this seriously. I
7 am a little passionate about this,
8 Commissioner Hamilton --

9 COMMISSIONER HAMILTON: I understand.

10 MR. JONES: -- but I really believe that this
11 is the biggest thing to hit the electric power
12 industry since the advent of air conditioning
13 way back in the 1950s and '60s.

14 COMMISSIONER HAMILTON: Thank you. Thank you
15 very much. Thank you, Madam Chairman.

16 COMMISSIONER BELSER: Thank you,
17 Commissioner Hamilton. Commissioner
18 Whitfield?

19 COMMISSIONER WHITFIELD: Thank you,
20 Commissioner Belser.

21 Phil -- excuse me, Commissioner Jones,
22 good to have you with us. And, Mr. Reynolds,
23 good to have you. Thank you for the
24 presentation.

25 Commissioner Jones, I would -- in talking

1 about the policy issues you brought up, you
2 certainly -- I think even Mr. Reynolds had it
3 on the -- the board, you certainly looked like
4 you went about it the right way involving the
5 stakeholders and ORS. And just -- with the
6 exchange you had with Commissioner Ervin, in
7 South Carolina, we -- the Commission can't
8 really be involved in setting policy. Now,
9 there is an energy office, of course, within
10 -- underneath the Office of Regulatory Staff,
11 which I'm sure you've probably worked with,
12 and they -- they put out plans -- energy plans
13 and policy and that sort of thing. And they
14 work with the governor's office, and we
15 certainly -- if they want to bring a -- an
16 allowable ex parte where typically ORS is the
17 neutral, we certainly are ready and willing to
18 -- to hear. But my question to you along
19 those regards -- it sounds like you really did
20 start at the right place here in South
21 Carolina, but just to -- just to follow up:
22 Have you -- and we certainly have the
23 authority to do pilot projects -- the
24 Commission has the authority to approve pilot
25 projects, but have you been to the legislature

1 where policy is set and laws are made and --
2 and that sort of thing? Because we -- we have
3 been kindly noticed that that's not in our job
4 description, so I just --

5 MR. JONES: Right.

6 COMMISSIONER WHITFIELD: -- would ask you:
7 Have you been down that path? And I'm not
8 talking about just for that pilot project.
9 I'm talking -- you -- you asked us to think --

10 MR. JONES: Sure.

11 COMMISSIONER WHITFIELD: -- longer term, and
12 you asked us to think on a aggregate scale, so
13 I would just ask you: Have you -- have you
14 been down that path?

15 MR. JONES: Commissioner Whitfield, the simple
16 answer is no. And the reason is, unless asked
17 -- unless asked specifically by a legislative
18 committee or a member -- or one of my members
19 in the state to help out, I -- I tend -- the
20 alliance tends not to get involved in the
21 legislative issues. Number 2, I am very
22 sensitive to what this commission has been
23 through. It started when I was president of
24 NARUC.

25 COMMISSIONER WHITFIELD: Yes, sir.

1 MR. JONES: I'm very sensitive to all the
2 issues with VC Summer and everything that
3 you're going through, so I would never ever
4 walk over to the state capital and make a --
5 an argument. What I will do is respond to
6 questions and work with stakeholders that want
7 to do something.

8 And just let me say that, of those states
9 I mentioned -- Maryland Michigan, Oregon -- I
10 mentioned a few -- about half had a
11 legislative mandate --

12 COMMISSIONER WHITFIELD: Uh-huh.

13 MR. JONES: -- where the legislature passed a
14 bill to tell them to entertain a utility
15 proposal and to move forward with
16 transportation electrification, but about half
17 didn't. So Maryland -- in particular,
18 Maryland and Michigan acted on their own
19 authority. So what is your authority? Your
20 authority is to set just and reasonable rates.

21 COMMISSIONER WHITFIELD: Yes, sir.

22 MR. JONES: Your authority is to regulate in
23 the public interest. Your authority is to
24 make sure you do the balancing of -- of -- of
25 the regulated utility and the consumers. So I

1 think, if you look at the Duke proposal and
2 other proposals, that is squarely within your
3 jurisdiction at the pilot stage. Maybe when
4 it gets to be bigger you need a little more
5 nudge or direction from the legislature. For
6 example, Commissioner Lipshultz --

7 COMMISSIONER WHITFIELD: Uh-huh.

8 MR. JONES: -- in Minnesota has been very
9 active. They're being -- and he thinks maybe
10 for the next phase, going beyond pilot
11 programs, a little legislative direction might
12 be helpful. But, for this level of pilot
13 programs, when you're kind of testing out rate
14 designs, rebates, and things, it's -- I would
15 argue that it's within -- squarely within your
16 jurisdiction.

17 COMMISSIONER WHITFIELD: Yes, sir. We -- as I
18 said, we certainly have the authority to
19 approve pilot projects here and have done so
20 in the past, and -- and we can also promulgate
21 regulations here, too. But I just wanted to
22 -- to thank you for sharing where you started
23 and -- with ORS and the stakeholders. And, as
24 Mr. Nelson stated in his opening remarks, he's
25 the designee of the executive director. Well,

1 you've got the executive director here in the
2 room and a couple of other -- at least two
3 other folks I see from ORS in here, so you --
4 you've certainly got resources here to talk
5 with. And obviously you've worked with them
6 in the past from what you're reporting today,
7 and I just wanted to kind of share that with
8 you. As -- as Commissioner Hamilton joked
9 with you about us being a little behind, this
10 -- this Commission is certainly willing and --
11 and ready to hear what comes before it and --
12 and be -- be proactive as -- to the extent we
13 can. We're somewhat a reactive body, but to
14 the extent the law allows us, we're certainly
15 willing to timely hear any of these -- these
16 issues and -- and any of these matters.

17 I wanted to ask you a couple of technical
18 questions real quick and that'll --

19 MR. JONES: Sure.

20 COMMISSIONER WHITFIELD: -- that'll wrap it
21 up. And this is either for you or
22 Mr. Reynolds, either one. You had a graph
23 that showed how the price has decreased in the
24 batteries, and it was a pretty -- pretty --
25 pretty good graph there showing how it was --

1 MR. REYNOLDS: That one there?

2 COMMISSIONER WHITFIELD: -- steady decline --
3 yes, sir.

4 (Slide 6)

5 COMMISSIONER WHITFIELD: And -- and talk to me
6 -- I'm not quite the policy wonk that
7 Commissioner Jones is, so talk to me a little
8 bit about -- and Commissioner Hamilton knows
9 that, too, right, Commissioner Jones? And
10 talk to me a little bit about the size of the
11 batteries as the price decreases.

12 MR. REYNOLDS: Sure.

13 COMMISSIONER WHITFIELD: Talk to me a little
14 bit about the size -- the physical size and
15 some of the technical --

16 MR. JONES: Sure.

17 COMMISSIONER WHITFIELD: -- attributes of the
18 batteries.

19 MR. JONES: Do you want to -- I'll -- I'll
20 start and let Lang finish. But, generally
21 with a plug-in -- what we call a "plug-in EV,"
22 the battery size is about seven -- anywhere
23 from 15 to 20 kilowatt-hours; 15 to 20
24 kilowatt-hours, you usually charge that with a
25 Level 2 charger. When you get into the full-

1 battery electrics like Tesla, the Audi e-Tron,
2 the Ford -- remember that Mustang that we
3 showed you? -- you're talking about a battery
4 in the range of 70 to 95 kilowatt-hours. It's
5 a much, much bigger battery. So it -- it --
6 it's heavier; it's more expensive, and it
7 takes longer to recharge. And so those bigger
8 batteries probably are better suited for a DC
9 fast charger, as Lang said, 30 minutes at a --
10 at 100-kilowatt DC fast charger.

11 For the plug-in EVs, you could probably
12 get by, like -- like I have a plug-in EV now
13 -- a "Honda Clarity," it's called -- 17 1/2-
14 kilowatt-hour battery; I can charge that in
15 2 1/2 hours with a Level 2 charger. I cannot
16 use a DC fast charger on that battery because
17 it's not capable of a DC fast charge.

18 I mean did I get that about right, Lang?

19 MR. REYNOLDS: Yeah. And I would --

20 MR. JONES: Batteries are getting bigger?

21 MR. REYNOLDS: Yeah. I would just add -- so
22 in -- in just relatable terms, if you look at
23 the Nissan Leaf, it came out in 2011; the
24 first range I think was 80 or 90 miles,
25 somewhere around there. So every two years,

1 the battery has gotten bigger. In terms of
2 kilowatt-hour capacity, it went from 80 miles
3 to 97 to 115 to 150 to, right now, it's at 220
4 miles of range for their entry-level vehicle.
5 So that's -- every two years, it's gotten
6 about 20 percent better, and the cost keeps
7 coming down. So that's kind of a real-world
8 example of how that translates into the
9 capabilities of the car.

10 COMMISSIONER WHITFIELD: And how about the
11 physical size as those -- as that mileage
12 increases?

13 MR. REYNOLDS: They've actually -- so, in the
14 case of Nissan, the battery is actually a
15 pretty similar size. It's -- it has gotten
16 bigger, but the -- the energy density of the
17 batteries is increasing, as well.

18 COMMISSIONER WHITFIELD: -- increasing, as
19 well?

20 MR. REYNOLDS: Yeah.

21 MR. JONES: So, Commissioner Whitfield, just
22 one other point from the battery size: The
23 reason this is coming down -- and, actually,
24 the number that -- right now is \$165 a
25 kilowatt-hour; we predict that it would be at

1 \$110 to \$100 in three years. The reason that
2 is happening is Tesla, the Chinese,
3 Volkswagen. They are building these huge,
4 what we call "gigafactories," so that's my
5 point about scale. As the industry scales up,
6 the unit costs are going to come down, right?
7 Because you're getting bigger scale, so you
8 measure those by gigawatt-hours. So for
9 example, Volkswagen just announced a -- a
10 plant in Sweden of 30 gigawatt-hours. The
11 Chinese are building three gigawatt-hour --
12 30-gigawatt-hour plants as we speak. Tesla is
13 building outside of Berlin, Germany, a 30-
14 gigawatt-hour battery factory. So -- so
15 that's how you measure it from a battery
16 standpoint, and that's why that graph on the
17 left keeps coming down.

18 COMMISSIONER WHITFIELD: It's coming down?

19 MR. JONES: Yeah.

20 COMMISSIONER WHITFIELD: Mr. Reynolds, I guess
21 I'm going to direct this one at you. And
22 we're talking about in the pilot -- we're
23 talking about the costs of -- of
24 infrastructure, the charging stations, all
25 that. What about -- and I know we're mostly

1 -- a lot of what you had up there have been
2 buses and commercial vehicles of some type,
3 but what about the infrastructure? Does that
4 encompass the infrastructure upgrades to your
5 system where you've got, I guess, a -- maybe
6 not a fair comparison, but I'm going back to a
7 residential neighborhood where you've got a --
8 a whole neighborhood wanting to plug in at one
9 time and, you know, the necessary upgrades
10 that you might need for transformers and the
11 distribution system of your -- of Duke's
12 system to handle that or -- talk to me about
13 that just a little bit.

14 MR. REYNOLDS: Sure. So in the DC fast charge
15 program specifically -- so -- so those costs
16 that we've forecast for the budget include the
17 upgrades for those installations. So if we're
18 putting in, say, two 100 kW chargers and we
19 need to do some kind of a transformer upgrade
20 at that location, you know, that budget does
21 include those costs.

22 In -- in the case of the residential
23 neighborhood, I would say that we -- we do not
24 see situations right now where we're getting,
25 saying, ten EVs in one neighborhood and we

1 have to do a -- a transformer upgrade. So
2 that's -- I wouldn't say that's contemplated
3 in this particular pilot.

4 COMMISSIONER WHITFIELD: So that -- you're
5 saying it's not contemplated in this
6 particular pilot?

7 MR. REYNOLDS: Right. The residential rebate
8 is -- is just a -- a rebate to the
9 participating customers, and so it -- it
10 doesn't take into account any system upgrades.

11 (Slide 13)

12 COMMISSIONER WHITFIELD: Okay. And -- and,
13 lastly, Commissioner Jones, I guess if I'd sat
14 in enough of the panels at NARUC, I would -- I
15 would know this but, talk to me, either one of
16 you, about the term you use, "managed
17 charging." We talking about utility-managed
18 charging versus customer or ratepayer? Talk
19 to me about that term a little bit.

20 MR. JONES: "Managed charging" is a -- is a
21 broad term. Just think of it in three areas.
22 The auto OEM: the vehicle itself can manage
23 charge, meaning what you're trying to do is
24 move the load off peak. Just think of it
25 as --

1 COMMISSIONER WHITFIELD: Right, right. Sure.

2 MR. JONES: Because if this -- if we --

3 COMMISSIONER WHITFIELD: Nighttime.

4 MR. JONES: If we mess this up, frankly, we --

5 we are all going to be guilty in the future,

6 but the worst thing that could happen with

7 this transformation is for all of this load to

8 move on peak, let's say, between 5 p.m. and

9 9 p.m. --

10 COMMISSIONER WHITFIELD: Nine p.m. Sure.

11 MR. JONES: -- when people come home, right?

12 You don't want that to happen.

13 COMMISSIONER WHITFIELD: Now, that I did hear

14 at NARUC.

15 MR. JONES: So managed charging could be

16 accomplished by the vehicle itself by setting

17 a timer in the car, which you have. It could

18 be accomplished by the EV infrastructure firm

19 like Greenlots or EV connector ChargePoint.

20 They all have timers in them. Or it could be

21 -- it could be accomplished by the utility.

22 The utility can do it in two ways. They

23 could do it based on technology from the grid:

24 send signals and control this, as they do with

25 demand response. Just think of it like a

1 demand response program.

2 COMMISSIONER WHITFIELD: Demand response.

3 Gotcha.

4 MR. JONES: And the other is rate design. So
5 you have to think of rate design as a -- as a
6 managed charging option, right? So if you
7 have very cheap rates -- Duke is not proposing
8 this, so maybe I shouldn't be talking about
9 it. But I'm kind of the national witness on
10 this, so -- so I'm going to give you what
11 other utilities are doing, as well. But you
12 can -- like Georgia Power and some others have
13 some super off-peak rates and they have high
14 on-peak rates, and so you can come up with
15 rate design or just diminish the demand charge
16 over time. If -- if you're concerned about
17 the coincident peak, based on your CP studies,
18 going up at certain times, you -- you -- you
19 fiddle -- adjust the demand charge. Again,
20 something totally within your jurisdiction as
21 the Commission. So -- so rate design is part
22 of managed charging, as well.

23 MR. REYNOLDS: Yeah. That's a good summary of
24 the different options. There are a lot of
25 different options for managed charging and,

1 again, the point is -- is to integrate the
2 load in a way that's beneficial for the system
3 rather than detrimental.

4 I would just add that, in our program,
5 what we proposed is specifically a utility-
6 managed charging regime. So we would directly
7 manage the load similar to a demand response
8 event.

9 COMMISSIONER WHITFIELD: Right. And then --

10 MR. REYNOLDS: Sorry. One more thing to add
11 on that is that the first year is a baseline
12 data-gathering period, so we need to first
13 understand how our customers are charging.
14 The data that we have right now is about seven
15 years old. It's from the Charge Carolina
16 study back in 2012, so it's very outdated and
17 we need to gather a new baseline of data and
18 understand what that looks like before we can
19 move forward with these potential other
20 methods.

21 COMMISSIONER WHITFIELD: Well, thank you for
22 that. That's good information, good
23 explanation. We -- we used to not have a
24 winter peak here either, but now we do have a
25 winter peak down here, Commissioner Jones. So

1 thanks to both of you for your presentation
2 and appreciate you being here today. That's
3 all I have, Commissioner Belser.

4 COMMISSIONER BELSER: Thank you, Commissioner
5 Whitfield. Thank you both for your
6 presentation today. We certainly appreciate
7 you sharing this information with us.

8 Mr. Wellborn, is there anything else from you
9 -- from the company?

10 MR. WELLBORN: No, Commissioner.

11 COMMISSIONER BELSER: Mr. Nelson, anything
12 else?

13 MR. NELSON: No, Commissioner.

14 COMMISSIONER BELSER: Okay. Thank you again.
15 I do remind everyone in attendance to please
16 be sure and turn in your forms at the back of
17 the room, and -- and, again, thank you for
18 being with us today. This -- this -- if there
19 is nothing further, then this meeting is
20 adjourned. Thank you.

21 (WHEREUPON, at 3:05 p.m. the
22 proceedings in the above-entitled
23 matter were adjourned.)

24 (*This transcript may contain quoted material.
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1 by the speaker.)

STATE OF SOUTH CAROLINA)
)
 COUNTY OF Richland)

CERTIFICATE

Be it known that Julie Taradash, took the foregoing proceeding and hereby attests:

that I was then and there a notary public in and for the State of South Carolina-at-large and that by virtue thereof I was duly authorized to administer an oath;

that the deponent/witness was first duly sworn to testify to the truth, the whole truth, and nothing but the truth, concerning the matter in the controversy aforesaid;

that the foregoing transcript represents a true, accurate, and complete transcription of the testimony so given at the time and place aforesaid to the best of my skill and ability;

that I am neither a relative nor an employee of any of the parties hereto, nor of any attorney or counsel employed by the parties hereto, nor interested in the outcome of this action;

that, if a recording of an event was supplied by another party for purposes of transcription and I was not present during that event, the foregoing pages were transcribed to the best of my skill and ability; additionally, any identifications of speakers were provided to me by the party supplying the recording;

that, in the event of a nonappearance by the witness, the foregoing details for the nonappearance are accurate.

In witness thereof, I have hereunto affixed my signature and title.



Julie Taradash

Date: 12/13/2019

Notary public for South Carolina.
 My commission expires September 15, 2025.

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